

EXPRESS MAIL NO.: <u>EV33343901903</u>	DATE OF DEPOSIT: <u>2-17-2004</u>
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**SHELF HAVING AN ADJUSTABLE DIVIDER**

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EXPRESS MAIL NO.: <u>EX 33343901903</u>	DATE OF DEPOSIT: <u>2-17-2009</u>
This paper and fee are being deposited with the U.S. Postal Service Express Mail Post Office to Addressee service under 37 CFR §1.10 on the date indicated above and is addressed to the Commissioner for Patents, Alexandria, VA 22313-1450	
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## SHELF HAVING AN ADJUSTABLE DIVIDER

### Cross-Reference to Related Applications

[0001] This application claims the benefit of U.S. Provisional Application No. 60/479,075, filed on June 17, 2003.

### Background

[0002] The present disclosure relates generally to a shelf for displaying goods and, more particularly, to a shelf having dividers which are movable to accommodate goods of varying size.

[0003] Storage members, such as shelving assemblies, are often provided for displaying goods. In a merchandising context, shelving assemblies are provided for displaying articles of commerce such as food items, health care products, and the like. Such shelving assemblies sometimes include dividers in order to keep adjacently-displayed products separate, such as in display channels. However, shelving assemblies incorporating product dividers may be inefficient in utilizing the space provided by the display channels. For example, if a product is generally smaller than the size of the display channel, then the use of shelving space is not maximized. This problem is especially pertinent in situations where the overall amount of display space is limited.

[0004] Therefore, what is needed is a shelving apparatus having a movable divider arrangement, which provides for the maximization of shelf space.

### **Brief Description of the Drawings**

[0005] Fig. 1 is a perspective view of a display fixture according to one embodiment of the present disclosure.

[0006] Fig. 2 is a perspective view of a shelf of the display fixture of Fig. 1.

[0007] Fig. 3 is an exploded view of the shelf of Fig. 2.

[0008] Fig. 4 is a perspective view of a divider associated with the shelf of Fig. 2.

[0009] Fig. 5 is a detailed view of a portion of the shelf of Fig. 2.

### **Description**

[0010] Referring to Fig. 1, a display fixture for displaying merchandise is generally referred to by reference numeral 10. The display fixture 10 includes a pair of parallel, vertically-extending frames 12 connected at their upper ends in any conventional manner by a plurality of horizontally-extending frame connectors 14. It will be understood that, for the sake of clarity, substantially similar components are given the same reference numerals such as the frames 12 and the frame connectors 14. The display fixture 10 further includes a pair of parallel, vertically-extending side frames 16 extending perpendicularly from the front frame 12 (as viewed in Fig. 1). The side frames 16 are connected at their upper ends in any conventional manner by a horizontally-extending side frame connector 18. The frames 12 and the side frames 16 are connected to and extend vertically from a horizontal base 19, which provides an appreciable degree of stability to the display fixture 10. It is understood that the frames 12 and the side frames 16 are connected to the base 19 in any conventional manner such as via bolts (not depicted), resulting in a generally free-standing display fixture 10.

[0011] The frames 12 and the side frames 16 cooperate to define a pair of side display areas 20 and a front display area 22 (as viewed in Fig. 1). A plurality of shelves 24, 26 are adapted to be housed within the display areas 20, 22, respectively, for displaying merchandise thereon. To facilitate disposal of the shelves 24, 26 within the display areas 20, 22, respectively, the frames 12 and the side frames 16 each include a plurality of support rods 28, 30, respectively, which receive the shelves 24, 26, respectively, in a manner to be described. While the shelves 24 differ

in size from the shelves 26, it is understood that the shelves 24, 26 are of substantially similar construct, and therefore, for the sake of clarity, only one shelf 26 will be described in detail.

**[0012]** Referring to Figs. 2 and 3, the shelf 26 includes a base member 32 and a retaining member 34, which cooperates with the base member to display merchandise (not shown). The base member 32 includes a perimeter rod 35 and a plurality of closely-spaced, parallel holding rods 36 extending from a rear portion 38 of the perimeter rod to a front portion 40 of the perimeter rod. The perimeter rod 35 is completed by a pair of side portions 42, 44 that extend between the rear and front portions 38, 40, respectively. The holding rods 36 are turned upward substantially 90° adjacent to the front portion 40, thereby resulting in the front portion being vertically-spaced from the rear portion 38 when the base member 32 is generally horizontal. Accordingly, the front portion 40 of the perimeter rod 35 aids in retaining merchandise on the base member 32 as will be further described.

**[0013]** The base member 32 further includes a pair of hook supports 46 attached to but extending beyond the side portions 42, 44 of the perimeter rod 35 and extending beneath the holding rods 36. The hook supports 46 are spaced between and parallel to the rear and front portions 38, 40 of the perimeter rod 35 to provide support for the shelf 26. The hook supports 46 have hooks 48 at the distal ends thereof, which are adapted to engage the support rods 30 of the side frames 16 (Fig. 1) to support the shelf 26 between the side frames. A bracing rod 50 is additionally attached to the side portions 42, 44 of the perimeter rod 35 beneath the holding rods 36 and extends parallel to and generally equidistant between the rear and front portions 38, 40 of the perimeter rod 35 to provide an additional degree of support for the shelf 26. It is understood that the hook supports 46 and the bracing rod 50 are attached to the perimeter rod 35 in any conventional manner, and that they may be attached likewise to the holding rods 36.

**[0014]** The retaining member 34 is adapted to engage the base member 32, and as such, includes a pair of front connector members 60 and a pair of rear connector members 62 (as viewed in Figs. 2 and 3). As the front connector members 60 are substantially similar and the rear connector members 62 are substantially similar, only one of each will be described. A pair of retaining slots 64, 66 are formed in the front connector member 60 such that the portion of the front hook support 46 that extends beyond the perimeter rod 35 (as viewed in Figs. 2 and 3) can be received into one of the slots. The lower slot 64 (as viewed in Figs. 2 and 3) is generally L-

shaped such that the portion of the hook support 46 disposed therein may be retained in the connector member 60 even should the shelf 26 be housed in the display area 22 in a tilted manner as will be described. The upper slot 66 (as viewed in Figs. 2 and 3) is also generally L-shaped to retain the portion of the hook support 46 disposed therein in a manner similar to that described with reference to the lower slot 64. As can be appreciated, the provision of lower and upper slots 64, 66 allows for adjustment of the retaining member 34 relative to the base member 32.

[0015] Turning now to the rear connector member 62, a pair of retaining slots 76, 78 are formed therein such that the portion of the rear hook support 46 that extends beyond the perimeter rod 35 (as viewed in Figs. 2 and 3) can be received into one of the slots. The lower and upper slots 76, 78 (as viewed in Figs. 2 and 3) are generally linear in shape to retain the portion of the hook support 46 disposed therein. The provision of lower and upper slots 76, 78 allows for the adjustment of the retaining member 34 relative to the base member 32.

[0016] The front connector member 60 and the rear connector member 62 disposed on the right side of the shelf 26 (as viewed in Figs. 2 and 3) are integrally formed with and extend from a side portion 90 of the retaining member 34. Similarly, the front connector member 60 and the rear connector member 62 disposed on the left side of the shelf 26 (as viewed in Figs. 2 and 3) are integrally formed with and extend from a side portion 92 of the retaining member 34. The side portions 90, 92 are connected in any conventional manner to a front wall 94 and a rear wall 96.

[0017] The front and rear walls 94, 96 include a plurality of U-shaped notches 102, 104, respectively, defined therein for receiving movable rod-like dividers 100 therebetween. The dividers 100 span the distance between the front and rear walls 94, 96 to define with the front and rear walls a plurality of generally rectangular display channels 106 of the shelf 26. As can be appreciated, the size of the individual display channels 106 can be altered by moving the dividers 100 relative to the side portions 90, 92 to extend between different notches 102, 104.

[0018] Referring to Fig. 4, the dividers 100 are generally rod-like, or linear, in shape and include a pair of grooved portions 108 formed proximate to the distal ends thereof. The grooved portions 108 of the dividers 100 are adapted to engage the surfaces of the front and rear walls 94, 96 defined by the notches 102, 104, respectively. Accordingly, the grooved portions 108 aid in retaining the dividers 100 on the retaining member 34 when the dividers are placed thereon.

**[0019]** Referring again to Figs. 2, 3 and 5, a pair of storage slots 110 are formed in the front wall 94 adjacent to the side portions 90, 92, respectively. Additionally, a pair of storage slots 112, corresponding to the storage slots 110, are formed in the rear wall 96 adjacent to the side portions 90, 92. The storage slots 110 and 112 cooperate with one another to store unused dividers 100. More specifically, the slots 110, 112 cooperate to receive the dividers 100 therein via the grooved portions 108 of the dividers. The dividers 100 are retained within the slots 110, 112 due to the size of the slots being smaller than the size of the portion of the dividers 100 not defined by the grooved portions 108.

**[0020]** A pair of C-shaped slots 114, 116 are further defined in the front and rear walls 94, 96, respectively. The C-shaped slots 114, 116 are in communication with the slots 110, 112, respectively, and are sized larger than the diameter of the dividers to accommodate longitudinal movement of the dividers 100 therethrough. Accordingly, the dividers 100 stored in the retaining member 34 via the slots 110, 112 can be removed from storage via the C-shaped slots 114, 116.

**[0021]** In operation, and with reference to Figs. 1 and 2, the display fixture 10 is assembled to house the plurality of shelves 24, 26 incorporating the movable dividers 100. Since the shelves 24, 26 are assembled onto the display fixture 10 in a similar fashion, only assemblage of a single shelf 26 will be described. The base member 32 of the shelf 26 is first installed between the side frames 16 by engaging the hooks 48 extending from the hook supports 46 onto a pair of corresponding support rods 30. As shown in Fig. 1, the front hook 48 engages a support rod 30' vertically-spaced from a support rod 30'' engaged by the back hook 48, thereby facilitating a gravity-fed arrangement as will be further discussed.

**[0022]** The retaining member 34 is then assembled onto the base member 32 by engaging the front and back connector members 60, 62 with the portions of the corresponding front and back hook supports 46 that extend beyond the side portions 42, 44 of the perimeter rod 35. The front and back connector members 60, 62 can be engaged with the front and back hook supports 46 via either the lower slots 64, 76, respectively, or the upper slots 66, 78, respectively, depending on the desired positioning of the retaining member 34 relative to the base member 32. Columns of merchandise, or goods, such as C1 and C2 depicted in Fig. 1, are then placed onto the shelf 26 in a desired orientation such that the columns of merchandise rest on the base member 32 while being retained on the shelf by the retaining member 34. During placement of the columns of

merchandise onto the base member 32, the dividers 100 are placed between the columns of merchandise to engage the front and rear walls 94, 96 via the U-shaped notches 102, 104, respectively. Accordingly, the columns of merchandise are separated from one another via the dividers 100, thereby effectively defining display channels 106 for the columns of merchandise.

[0023] As can be appreciated, the dividers 100 are adjustable along the notches 102, 104 to accommodate columns of merchandise having differing widths. As the dividers 100 rest in the corresponding notches 102, 104, the dividers are adjustable by picking up an individual divider and moving the divider to rest in a different pair of corresponding notches. Accordingly, the dividers 100 can be adjusted to minimize excess space associated with each display channel 106, which in turn, maximizes the amount of merchandise that can be displayed on the shelf 26.

[0024] The shelf 26 facilitates a gravity-fed arrangement for the display of columns of merchandise. For example, upon removal of an item of merchandise from one of the display channels 106, the remaining items of merchandise in the corresponding display channel will slide forward via gravity with the forward-most remaining item replacing the item just removed. The front portion 40 of the base member 32 cooperates with the retaining member 34 to retain the remaining items on the shelf 26.

[0025] It is understood that variations may be made in the foregoing without departing from the scope of the disclosure. For example, the specific arrangement of frame members 12, 16 and the associated frame connectors 14, 18 can be altered to include additional frame members and connectors. Moreover, the base 19 may be removed or replaced with a base having an alternative configuration.

[0026] Still further, although the shelf 26 is described as being comprised of two elements, e.g. the base member 32 and the retaining member 34, it is understood that the shelf may include additional elements, or alternatively, may be unitary in nature. Moreover, although described as hooks 48, the hooks 48 may take a variety of other shapes other than a hook shape.

[0027] Furthermore, although the storage slots 110, 112 are described as having a size smaller than the size of the dividers 100, it is understood that in some embodiments, the size of the storage slots may be equal to or greater than the size of the dividers.

[0028] Still further, the support rods 30 may be replaced with supports having alternative configurations. In such embodiments, the hooks 48 may be altered to correspond to the shape of

the alternative support rods 30. Furthermore, although described as having two hook supports 46, it is understood that the base member 32 may include any number of hook supports, and thus a different number of hooks 48. Similarly, although described as having one bracing rod 50, it is understood that the base member 32 may include any number of braces.

[0029] Moreover, although described as having a specific shape, the retaining slots 64, 66 of the front connector members 60 and the retaining slots 76, 78 of the rear connector members 62 may have alternative shapes. The U-shaped notches 102, 104 may be formed to take alternative shapes other than a U-shape. For example, the notches 102, 104 may be formed as V-shaped notches, and the shape of the grooved portions 108 of the dividers 100 can be altered to accommodate the alternatively-shaped notches. Still further, the C-shaped slots 114, 116 may be configured in other shapes other than a C-shape.

[0030] It is also understood that all spatial references, such as "horizontal, "vertical, "upper," "lower," "front," "back," "left," and "right," are for illustrative purposes only and can be varied within the scope of the disclosure. Accordingly, all such modifications are intended to be included within the scope of this invention as defined in the following claims. Additionally, in the claims, means-plus-function clauses are intended to cover the structures described herein as performing the recited function and not only structural equivalents, but also equivalent structures.